



Missouri Department of Health and Senior Services  
Office of Surveillance

# 2004 GIS Annual Report

## Introduction

Geographic Information System (GIS) is an asset that has many uses to the employees of the Department of Health and Senior Services (DHSS). Computerized maps showing the spread of communicable diseases, locations of field staff and resources, and potential impact of a bioterrorism event are among the many uses of Geographic Information Systems. 2004 was a very big year for GIS at the DHSS. DHSS has more people using GIS than ever before. There are currently 106 people in the DHSS GIS user group representing users in every Division within the Department and many Local Public Health Agencies. This annual report serves as an annual review of the accomplishments of the GIS unit within the Office of Surveillance in the Division of Environmental Health and Communicable Disease Prevention.

## GIS Administration

The GIS staff continued to increase the GIS infrastructure at DHSS in 2004. Improvements continued to the current spatial database engine (SDE) and Internet mapping systems (IMS). When completed, SDE will extend data to GIS users throughout DHSS. IMS is currently being used to provide interactive mapping via the DHSS Internet. The process of developing mapping standards for the Department continued. The GIS staff provided many hours of technical support to GIS users throughout the Department. An upgraded version of ArcGIS software was also introduced in 2004. The GIS staff fully tested upgrade before implementation in order to ensure that everyone using the upgrades would be successful with converting and using their existing projects. The GIS staff also represented DHSS at several statewide and regional GIS committees including; Missouri Geographic Information Systems Advisory Committee, Mid-Missouri GIS Users Group, and Enterprise Architecture - GIT discipline.

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### GIS Programs

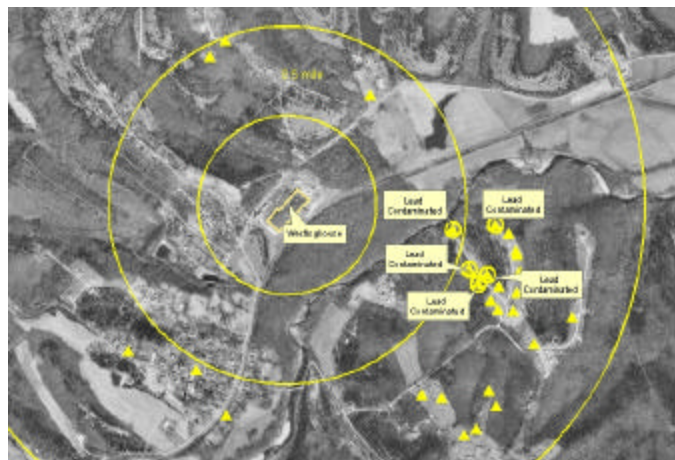
- **BT GIS Program**

Many positive changes were made in 2004 in regard to the BT GIS program. The Department's emergency response GIS program, MERGIS, was transitioned to the Missouri National Guard. This change is being made so that other state agencies can more fully use the product and also will allow the GIS staff to concentrate on its primary objective to protect the health of Missouri citizens. To assist with that objective, the Geographic Health Emergency Response Mapping (GHERM) system was put into place in 2004. This system incorporates GIS in the planning, preparation, response and recovery for public health emergencies.

- **Local BT GIS Program**

In an ongoing collaboration with the DHSS Center for Emergency Response and Terrorism, the GIS staff assisted 9 Local Public Health Agencies in Missouri to obtain GIS software and training in 2004.

Four other LPHA's were able to obtain software through other means, and chose to join the program, bringing a total of 22 LPHA's that have agreed to participate in the program. The GIS staff provide ongoing training and technical support to all of the 22 agencies.



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- **GIS for Environmental Public Health Tracking Grant**

In August 2002 the Division of Environmental Health and Communicable Disease Prevention (EHCDP) submitted a competitive grant application to the Centers for Disease Control and Prevention (CDC) for the Environmental Public Health Tracking grant (EPHTG). Part of this grant funding included a GIS position to assist the grant team with spatial analysis and other GIS related activities. GIS has become an integral part of the tracking grant team activities. Some of the projects include:

- Demolition Activities and Children's Lead Levels in St. Louis City: A Time/Space Analysis
- Using Tailings as Ag. Lime in St. Francis County, Missouri
- Relative Pocket of Need (RPoN) Formula

### GIS Projects

- **Division of Environmental Health and Communicable Disease Prevention (EHCDP)**

The largest number of GIS projects completed by the staff in 2004 was within the Division of EHCDP. Most of these projects revolved around bioterrorism, communicable diseases and environmental conditions. Some of the projects included:

- Influenza mapping
- Bioterrorism mapping
- Cryptosporidiosis mapping
- West Nile mapping
- Pertussis mapping
- Shigella mapping
- CD Surveillance mapping
- Flu Vaccine maps
- RUSick2 maps
- Radon mapping

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- **Other Offices and Divisions within DHSS**

Many other projects were also completed for employees outside of the Division of EHCDP. Over 250 hours of GIS staff time was logged to completing projects for other Offices and Divisions within DHSS. Some of the project included:

- Fleet mapping
- DHSS property lease maps
- DHSS building layouts
- Senior Rx maps
- Senior Services staffing maps
- Nutrition Network maps
- MS/ALS project

### GIS Projects – Continued

- **Other Agencies outside of DHSS**

The GIS staff has responded to many calls for project assistance from agencies outside of DHSS. Some of the agencies include:

- Nodaway County Health Department
- Butler County Health Department
- Wayne County Health Department
- St. Louis City Health Department
- Cole County Health Department
- Cape Girardeau County Health Department
- Cass County Health Department
- Boone County Health Department
- Jefferson County Health Department
- St. Joseph City Health Department
- St. Louis County Health Department
- West Plains
- Missouri Department of Natural Resources
- State of South Dakota
- Purdue University
- Tulane University

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### GIS Training

The GIS Training Program at DHSS experienced significant expansion in 2004. The GIS staff added 4 new classes to the GIS Training curriculum in 2004. In addition to the *GIS in Public Health* and *Local BT GIS* classes that they were offering the previous year, *GIS for Managers*, *Advance Topics – Geocoding*, *Advanced Topics – Symbology* and *Statistical Mapping* were added to the curriculum. Due to the new class offerings and the increased promotion of GIS training at DHSS the GIS staff doubled the number of people trained in 2004 from the previous year and trained more than 7 times the number of people compared to 2002. (See Table 1)

**Table 1 – GIS Training Classes Offered in 2002, 2003 and 2004**

Training Classes Offered	Number of People Trained
<b>2004 GIS Training:</b>	
GIS in Public Health	79
GIS for Managers	56
Local BT GIS 3 day training	21
Advanced Topics - Geocoding	4
Advanced Topics - Symbology	6
Statistical Mapping	10
<b>2004 Total:</b>	<b>176</b>
<b>2003 GIS Training:</b>	
GIS in Public Health	48
Local BT GIS	40
<b>2003 Total:</b>	<b>88</b>
<b>2002 GIS Training:</b>	
GIS in Public Health	23
<b>2002 Total:</b>	<b>23</b>

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### GIS Drills

In order to practice skills needed in the event of an emergency, the GIS staff conducted and participated in a number of drills during 2004. New in 2004 was the creation of desktop drills for the Local BT participants. Every month a new drill scenario was sent to all participants and they conducted the exercise on their computer in their office. When they completed the drill exercise, they emailed their results back to the GIS office at DHSS. Feedback was then given to the participants about how they completed the maps. The GIS staff assisted in the planning of emergency response drills at the state, region, and local level. They also participated in other onsite drills throughout the state including:

- South East Regional Response Drill, Cape Girardeau, MO
- DSR Drill, Jefferson City, MO



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### GIS Presentations

During 2004, the GIS staff spent many hours giving presentations and conducting discussions about the GIS projects that are being done at DHSS. These presentations were done in many different formats including; oral presentations, poster presentations, round table discussions, panel participation and booth presentations. Presentations were done in the following locations:

- St. Louis University School of Public Health in St. Louis, MO
- DHSS Day at the Missouri State Capitol in Jefferson City, MO
- EPHT Conference in Philadelphia, PA
- CLPP Conference in San Diego, CA
- MAGIC Conference in Kansas City, MO
- Illinois Department of Health in Illinois
- ISEE Conference in New York, NY
- EPA Indicator Conference in Kansas City, MO
- PHIN Conference in Atlanta, GA
- SND Meeting in Chicago, IL
- EPHT Workshop in San Francisco, CA
- Tulane University in New Orleans, LA
- DHSS GIS Day in Jefferson City, MO
- International Health GIS Users Conference in Washington, D.C.
- Grand Rounds at DHSS
- Regional Bioterrorism Planning Conference